Resources for Teaching about UD and Accessibility in Course Content

(Note: this falls under “Presentations – Developing New” at <https://docs.google.com/spreadsheets/d/1nJb1_PNbT6bMEz0AuWA1HRj-w2LeujXMatvmajYS4is/edit#gid=0>)

# Background Resources for EOWG CSUN f2f

Shinohara, Kristen, et al. "Who Teaches Accessibility?: A Survey of US Computing Faculty".

(You can read the full article at: <http://teachaccess.org/wp-content/uploads/2018/02/SIGCSE-TeachingAccessibility-Shinohara.pdf>)

Key excerpts:

**The most critical barriers to teaching accessibility that faculty reported were the absence of clear and discipline-specific accessibility learning objectives and the lack of faculty knowledge about accessibility. Faculty desired resources that were specific to the areas of computing in which they teach rather than general accessibility resources and guidelines.**

Table 4. Learning objective faculty reported teaching

Understand technology barriers faced by people with disabilities 66.1%

Understand design concepts: universal design,

ability- based design, inclusive design, participatory design, etc. 65.9%

Engage with individuals from diverse populations appropriately 40.0%

Be able to evaluate web pages by accessibility

standards and heuristics (e.g., W3C, WCAG) 36.5%

Be able to develop accessible web technologies (e.g.,

use of alt-tags, captioning videos, and describing images) 36.0%

Be able to employ design techniques: personas,

paper prototyping, high-fidelity prototyping 35.2%

Understand legal accessibility regulations (e.g.,

Section 508, Americans with Disabilities Act, etc.) 31.5%

Understand the different models of disability (e.g.,

social, medical or legal models) 15.2%

Be able to develop with accessibility focused

technical languages and tools (Apple’s UI

Accessibility Programming Interface, Android’s

Accessibility Events, Universal Windows Platform) 6.1%

Other 4.8%

None of the above 3.2%

Table 6. Barriers to teaching accessibility

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | All | Teaches | Doesn’t | *χ*2 |
| Not a core part of Curriculum. | 52.3% | 45.6% | 54.0% | 8.4\*\* |
| Don’t know enough to teach it | 49.1% | 26.1% | 54.9% | 99.3\*\* |
| Lack of appropriate textbook | 14.9% | 24.8%  | 12.4%  | 32.6\*\* |
| Lack of students and administrator awareness | 14.1% | 17.1% | 13.4% | 3.3 |
| None of the above | 13.5% | 17.3% | 12.6% | 5.6\* |
| Other | 13.1% | 12.0% | 13.4% |  |
| Lack of support for topics addressing real challenges for people with disabilities | 13.1% | 21.3% | 11.0% | 25.3\*\* |
| Difficult engaging students | 10.2% | 19.2% | 7.9% | 36.3\*\* |
| Lack of demand in industry | 8.2% | 11.5% | 7.4% | 6.7\*\* |
| Difficult to recruit people with disabilities | 7.2% | 12.8% | 5.8% | 19.1\*\* |
| All of the above | 6% | 2.7% | 6.0% | 11.2\* |

\**p* < .05, \*\**p* < .01

Table 7. Accessibility should be taught in CS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | All | Teaches | Doesn’t |  |
| Strongly Agree | 4.1% | 42.2% | 12.5% |  |
| Agree | 42.6% | 45.1% | 42.0% |  |
| Neither Agree nor Disagree | 29.9% | 5.6% | 36.0% |  |
| Disagree | 4.8% | 1.3% | 5.7% |  |
| Strongly Disagree | 4.1% | 5.6% | 3.7% |  |

IEEE, ACM. *Information Technology Curricula 2017*. ACM, 2017. Print.

(You can read the full document at: <https://www.acm.org/binaries/content/assets/education/curricula-recommendations/it2017.pdf>)

Key excerpts:

There are many pedagogical challenges and opportunities involving information technology. Although the report

underscores the need for accessibility for all people, it does not discuss how to address the situation. For example,

game-based learning could be part of a process to achieve accessible learning. The task group believes such attention should take place at the institution level as well as through ongoing research by scholars and practitioners.

ITE-UXD-07 Assistive technologies and accessibility

a. Describe several main principles for universal design.

b. Illustrate the advantages and disadvantages of biometric access control.

c. Describe the symptoms of repetitive stress syndrome; list some of the approaches that can ameliorate the problem.

d. Use accessibility guidelines and standards in the design of a user interface.

e. Design a user interface to effectively use accessibility features such as an automated narrator.

f. Describe a criterion for choosing a biometric access system for a given application.

g. Propose an assistive technology computer device for persons with visual, hearing, cognitive, or motor difficulties.

h. Describe a possible interface that allows a user with severe physical disabilities to use a website.

i. Describe the structure and components of an assistive technology.

Proposal: Develop lessons for the following core topics mentioned in the article above. WAI already has resources for most of the topics below which can be weaved into the lessons.

Understand technology barriers faced by people with disabilities

Understand design concepts: universal design, ability- based design, inclusive design, participatory design, etc.

Engage with individuals from diverse populations appropriately

Be able to evaluate web pages by accessibility standards and heuristics (e.g., W3C, WCAG)

Be able to develop accessible web technologies (e.g., use of alt-tags, captioning videos, and describing images)

Understand legal accessibility regulations (e.g., Section 508, Americans with Disabilities Act, etc.)